

colour-blind persons readily confuse red and green, but rarely red and blue. An important question raised is about the probability that in every act of visual perception there is a picture of the object seen printed on the retina by the action of light on this pigment. If this is so, we may suppose that the nerve fibres are stimulated in varying degrees by the colouring matter, according to the extent to which it has undergone the bleaching process. Of course it is easy to point out difficulties attaching to such opinions. It must be regarded as certain, however, that in the retina we have not merely a sensitive surface, like the photographer's plate, but a self-acting photographic workshop, the retina not only receiving an impression, but wiping off the old picture and charging itself in preparation for another. Speculations on the subject for the present have perhaps little value, and exact knowledge is likely to increase slowly, since in animals we can scarcely know with certainty how much is actually seen, and man cannot be made the subject of experiments. Of course new modes of investigation may unexpectedly be discovered, and lead to unexpected extensions of knowledge.

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ART. III.—*Sir William Thomson's Electric Replenisher.*

BY F. J. PIRANI, ESQ., M.A.

[Read 11th April, 1878.]

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ART. IV.—*Some Experiments in the Gold Bullion Assay.*

BY ALFRED MICA SMITH, B.SC.

[Read 16th May, 1878.]

THE following series of assays were undertaken at the suggestion of Mr. George Foord, of the Melbourne branch of the Royal Mint, and performed there some time ago. The demonstrations which constitute Part I. are here offered as a communication in the hope that they may be of use for reference by some who may not themselves have the opportunity of performing the exercises, as well as by others,